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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,833

05/17/2006

Makoto Okada

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32294 7590 05/22/2008
SQUIRE, SANDERS & DEMPSEY L.L.P.
8000 TOWERS CRESCENT DRIVE
14TH FLOOR
VIENNA, VA 22182-6212

EXAMINER

PRITCHETT, JOSHUA L

ART UNIT

PAPER NUMBER

2872

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,833	Applicant(s) OKADA ET AL.	
	Examiner JOSHUA L. PRITCHETT	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5,6,16,18,20,23,26,29 and 33 is/are allowed.
- 6) ☒ Claim(s) 1-4,7-15,17,19,21,22,24,25,27,28,30-32,34 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to Preliminary Amendment filed April 6, 2006. Claims 1, 3, 5, 7, 9, 11, 12 and 14-18 were amended and claims 19-35 were added as requested by the applicant.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 11, 15, 17, 22, 28 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Clark (US 6,426,837).

Regarding claims 1 and 3, Clark discloses a polarizing element having a two layer structure (col. 3 lines 5-10) in which a grating pattern having a constant period is formed in a substrate (Fig. 1), a cross section of the grating pattern having a rectangular shape (Fig. 1) and the period of the grating is less than the wavelength (abstract) and the grating designed to reflect TE polarization and transmit TM polarization (Fig. 5 at wavelength 650 nm).

Regarding claims 2 and 4, Clark discloses the efficiency of the grating is at least 80% (Fig. 5 at wavelength 650 nm).

Regarding claims 11 and 22, Clark discloses the grating pattern is formed by transfer from a metal mold (col. 4 lines 40-50).

Regarding claims 15 and 28, Clark discloses the grating height is smaller than the grating period (Fig. 1; col. 5 line 15; col. 8 line 36).

Regarding claims 17 and 32, Clark discloses the claimed structural limitations and therefore is capable of performing the claimed functional limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 8, 24, 30, 31, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (US 6,426,837) in view of Takahashi (US 2001/0050892).

Regarding claims 7, 8 and 31, Clark teaches the invention as claimed but lacks reference to a second wavelength. Takahashi teaches the use of a second wavelength for use in CD and DVD reading and writing (para. 0015) and the ability of a subwavelength grating to reflect TE polarization at both the first and second wavelength and transmit TM polarization at both the first and second wavelength (Fig. 32C). Takahashi further teaches the grating having an

efficiency of at least 70% (Fig. 32C). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Clark invention include the second wavelength of Takahashi for the purpose of using the grating for a dual CD/DVD player or writer.

Regarding claim 24, Clark teaches the grating pattern is formed by transfer from a metal mold (col. 4 lines 40-50).

Regarding claim 30, Clark teaches the grating height is smaller than the grating period (Fig. 1; col. 5 line 15; col. 8 line 36).

Regarding claims 34 and 35, Clark teaches the claimed structural limitations and therefore is capable of performing the claimed functional limitations.

Claims 9, 10, 12-14, 19 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (US 6,426,837) in view of Ohta (US 2003/0228413).

Clark teaches the invention as claimed but lacks reference to the claimed materials of the grating. Ohta teaches a polyolefin resin substrate (para. 0013) with a titanium oxide film deposited thereon (para. 0020) and the film having a thickness of less than 0.3 microns (para. 0112). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Clark invention include the materials of Ohta for the purpose of making a grating with precise spacing and shapes.

Claims 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark (US 6,426,837) in view of Takahashi (US 2001/0050892) as applied to claim 7 above, and further in view of Ohta (US 2003/0228413).

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Clark in combination with Takahashi teaches the invention as claimed but lacks reference to the claimed materials of the grating. Ohta teaches a polyolefin resin substrate (para. 0013) with a titanium oxide film deposited thereon (para. 0020). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Clark and Takahashi invention include the materials of Ohta for the purpose of making a grating with precise spacing and shapes.

Allowable Subject Matter

Claims 5, 6, 16, 18, 20, 23, 26, 29 and 33 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claim 5, the prior art of record fails to teach or suggest the grating designed so as to reflect TE polarization and transmit TM polarization for a first wavelength of light and transmit TE polarization and reflect TM polarization for a second wavelength of light where the second wavelength of light is longer than the first wavelength of light.

The remaining claims depend from claim 5 and are allowable for the same reasons.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA L. PRITCHETT whose telephone number is (571)272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joshua L Pritchett/
Primary Examiner
Art Unit 2872